Date: no:

* Notes : Shortly to Draw the Bode diagram we do the following steps

1- Put the T.F on the time constant (for O.L.T.F)

2- $S \longrightarrow j\omega$

3- determine the type of the system

a- type 0 : the Bode diagram starts with a herizontal line ($L_m = 20\log K$)

b- type 1 : the Bode diagram starts with a line with slope -20 dB/decade

c- type 2 : the Bode diagram starts with a line with slope -40 dB/decade

These lines intersect with $\log\omega$ axis at $\omega = (K)^{\frac{1}{type}}$

4- determine Corner frequencies they are the Boundaries of diagram lines

5- at each Corner frequeney the Bode diagram slope changes

- if the ω_c of a 1st order zero Slope += 20 dB/decade
- if the ω_c of a 1st order pole Slope -= 20 dB/decade
- if the ω_c of a 2nd order zero slope += 40 dB/decade
- if the ω_c of a 2nd order Pole slope -= 40 dB/decade

6- Form a table of ϕ vs ω to sketch ϕ vs $\log\omega$

7- determine PM and GM from the sketch